QUESTION #8

ATTACHMENT #5

QUESTION #8g

EXCAVATION SAFETY PROCEDURE

8-9

1.0 PURPOSE

1.1 The purpose of this procedure is to prevent injuries to personnel who work in or around excavations, and to define the guidelines and requirements to ensure personnel safety and property protection when conducting excavations. All excavations shall be done in a manner to avoid damage to and minimize interference with all underground pipelines in the vicinity of the excavation area and shall take all reasonable steps to protect underground pipelines from damage. This procedure applies to all assets and projects requiring excavations or trenches.

2.0 STANDARD

2.1 **All Company employees:**

2.1.1 Designated as Competent Persons by their Supervisor shall receive documented training per the Training Matrix.

2.1.2 Notify Environmental Specialist and Safety Specialist if any historic contamination is discovered during excavation activities.

2.2 **Supervisors or Project Managers shall**:

2.2.1 Develop, complete and distribute a Job Plan to protect personnel prior to excavation or entering the excavation area. Job plans shall include specific guidance and identification of the maximum pipe support spacing for each diameter, wall thickness, grade of pipe, and type of girth joint to be encountered on the subject line segment. In addition, the plan shall consider a detailed review of the following, but not limited to; original construction records, previous ILI logs, leak history, drawings and alignment sheets, line fill data, and maintenance reports. Land topography must be evaluated and a determination made whether there is the potential for existing inherent mechanical stresses in the pipeline. This includes a review of previous work activity or previous events in the area. If the determination is made that there could be inherent mechanical stresses in the pipeline due to topography or events mentioned above, then extra length and width of ditch shall be excavated to allow the pipe to flex and relieve existing stress. This guidance shall be provided in the job plan. The Job Plan shall indicate the need for protective systems. The plan shall be developed to the level necessary to insure compliance with state and local safety standards as well as the OSHA Excavation Safety standard.

2.2.2 Ensure Environmental Specialist has conducted a site environmental review and provided clearance prior to any excavation activities along the Right-of-Way.

2.2.3 Designate a Competent Person to oversee all work prior to excavation or entering the excavation area. Training and certification of the competent person must be provided to Magellan employee responsible for the job prior to any excavation work being conducted.

2.2.4 Ensure Project Personnel complete the Verification of Rehabilitation Excavation Form for all excavations of pipeline defects when conducting excavations based on ILI results.

2.3 **Competent Person shall**:

2.3.1 Identify existing and predictable hazards in the surroundings or working conditions which are dangerous to employees.

2.3.2 Be authorized to take prompt corrective measures to eliminate the hazards.

2.3.3 Identify existing asbestos hazards in the workplace and select the appropriate control strategy for asbestos exposure.

2.3.4 Recognize different soil types, soil analysis, conduct soil classifications tests, reclassify soil after conditions change and the use of protective systems and the requirements of the excavation standard.

2.3.5 Assure the proper locations of underground installations or utilities, and that the proper utility companies have been contacted.

2.3.6 Conduct soil classification tests and reclassify soil after any condition changes.

2.3.7 Perform daily inspections (using the Authorization to Work Permit or equivalent) of all excavations, trenches, adjacent areas and protective systems prior to worker entry, after any rainfall or soil change, or as needed throughout the shift.

2.3.8 Focus on any evidence of a situation that could result in a cave-in, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions.

> **NOTE**: Every excavation shall have a competent person on–site when personnel are in the excavation. The Competent Person shall approve and confirm the excavation site safe in accordance to OSHA 29 CFR Parts 1926.650 through 1926.652 prior to entry.

3.0 SAFETY REQUIREMENTS GUIDELINES

3.1 The following safety guidelines will be addressed during excavation:

3.1.1 Before mainline excavation begins, consider contacting Pipeline Integrity for review of smart pig data indicating potential buried pipeline appurtenances. (ie. TORs, Nipples, Taps, Small Diameter Connections)

3.1.2 Review alignment sheets and necessary drawings for foreign crossings that may have been documented in the past.

3.1.3 Solicit local input (i.e. Maintenance and Area Operations Personnel)

3.1.4 Look for above ground warning signs

3.1.5 Probe for below ground obstructions

3.1.6 Consider flat bar across backhoe bucket teeth

3.1.7 Watch carefully for overhead obstructions

3.1.8 Hand dig in tight areas

3.1.9 Determine soil composition and classification.

3.1.10 Determine surface and subsurface water.

3.1.11 Determine the depth of excavation and length of time the excavation will remain open.

3.1.12 Identify and utilize Personal Protective Equipment (PPE).

3.1.13 Prohibit individuals from working in an excavation site where water is accumulating unless adequate measures are used to protect the personnel.

3.1.14 Powered excavation equipment shall not be used within 24" (unless otherwise specified in section 9.0) of underground installations until visually verified and confirmed safe to continue excavation. While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard personnel.

3.1.15 If excavation work is in or around a public road ROW, require individuals to wear reflective vests as described in Minimum PPE Requirements. Utilize signs and barricades to protect personnel, vehicle traffic, pedestrians and to comply with local & state traffic control codes and regulations.

3.1.15.1 Provide adequate physical barriers and/or warning systems

3.1.15.2 Provide blinking caution lights and/or adequate area lighting in conjunction with barricades to highlight the excavation area at night.

3.2 Hazardous Atmosphere Testing

3.2.1 Monitor the air as described in the Air Monitoring Performance Procedure prior to entering any excavation four feet (1.22 m) or greater in depth to determine if the atmosphere is hazardous.

3.2.2 Excavations four feet (1.22 m) or greater in depth, **and** where oxygen deficiencies (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably exist such as excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, shall have the atmosphere tested as often as necessary prior to entry. Hazardous atmospheres shall be tested for Oxygen deficiency, LEL greater than 10% and toxic materials exceeding PELs.

3.2.3 Utilize Engineering Controls or PPE shall be used to control the level of atmospheric contaminants to acceptable levels. Wear the appropriate PPE as described in the Respiratory Protection Procedure if engineering controls cannot control the atmosphere to acceptable levels.

3.2.4 Monitor the air continuously as described in the Air Monitoring Performance Procedure if the atmosphere is determined to be hazardous. Document readings every two hours within the Confined Space Entry Permit section of the Authorization to Work Permit.

3.3 Confined Space

3.3.1 Designate excavations as confined spaces if they meet all three of the criteria listed below. Complete the Confined Space Entry section of the Authorization to Work Permit.

3.3.1.1 Is large enough and so configured that an employee can bodily enter and perform assigned work; and

3.3.1.2 Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits or spaces that may have limited means of entry.); and

> **NOTE**: Fixed ladders may indicate a limited or restricted means of entry

> **NOTE**: Properly designed and constructed excavations with entry and exit ramps on both ends and not exceeding 25 feet in length are acceptable means for entry or exit.

3.3.1.3 Is not designed for continuous employee occupancy.

3.3.2 Monitor the air continuously as described in the Air Monitoring Performance Procedure for all excavations determined to be confined spaces. Document readings every two hours within the Confined Space Entry Permit section of the Authorization to Work Permit.

3.4 Excavation Designs

3.4.1 If the excavation is to be over 20 feet deep, procure the design from a Registered Professional Engineer.

3.4.2 If a trench or excavation is four feet or deeper, include a safe means of entry and exit which includes stairways, ramps or ladders.

3.4.3 Ensure structural ramps, if used, meet design specifications.

3.4.4 Design trenches so that no one will have to travel more than 25 feet of lateral distance to reach the stairway, ramp or ladder.

3.4.5 Store spoil piles a minimum of two feet from the sides of the excavation. The spoil pile must not block the safe means of exit.

3.5 **Excavation Protection Systems**

3.5.1 Adequate protective systems shall be utilized to protect personnel. Protection system shall have the capacity to resist without failure all loads that are intended to be, or could reasonably be expected to be, applied to or transmitted to the system. The three basic protective systems for excavations and trenches are sloping and benching systems, shoring, and shields.

3.5.2 Sloping and Benching Systems

3.5.2.1 The table provided in Appendix B of the OSHA Standard (Subpart P) may be used to determine the maximum allowable angle (after determining the soil type).

3.5.3 Shoring Systems

3.5.3.1 Shoring utilizes a framework of vertical members (uprights), horizontal members (Wales), and cross braces to support the sides of the excavation to prevent a cave–in. Timber, aluminum hydraulic and mechanical shorings are common examples. The different examples of shoring are found in the OSHA Standard under these appendices:

3.5.3.1.1 **APPENDIX C** : Timber Shoring for Trenches

3.5.3.1.2 **APPENDIX D** : Aluminum Hydraulic Shoring for Trenches

3.5.3.1.3 **APPENDIX E** : Alternatives to Timber Shoring

3.5.4 Shield Systems (Trench Boxes)

3.5.4.1 Unlike sloping and shoring, shielding does not prevent a cave-in. Shields are designed to withstand the soil forces caused by a cave-in and protect the personnel inside the structure.

3.5.4.2 Most shields consist of two flat, parallel metal walls that are held apart by metal cross braces.

3.5.4.3 Shielding design and construction is not covered in the OSHA Standards. Shields must be certified in design by a Registered Professional Engineer and must have either a registration plate on the shield or registration papers from the manufacturer on file at the job-site office. **THE MANUFACTURER MUST APPROVE ANY REPAIR OR MODIFICATION.**

3.5.4.4 Shields must not have any lateral movement when installed.

3.5.4.5 Personnel will be protected from cave-ins when entering and exiting the shield (e.g., a ladder within the shield or a properly sloped ramp at the end).

3.5.4.6 Personnel are not allowed in the shield during installation, removal or during any vertical movement.

3.5.4.7 Shields can be two feet above the bottom of an excavation if they are designed to resist loads at the full depth and if there are no indications of caving under or behind the shield.

3.5.4.8 The shield must extend at least 18 inches above the point where proper sloping begins (the height of the shield must be greater than the depth of the excavation).

3.5.4.9 The open end of the shield must be protected from the exposed excavation wall. The wall must be sloped, shored, or shielded. Engineer designed end plates can be mounted on the ends of the shield to prevent cave-ins.

3.5.5 Exceptions to using an Excavation Protection System

3.5.5.1 If the excavations are made entirely in stable rock.

3.5.5.2 If the excavations are less than five feet deep and declared safe by a Competent Person.

3.6 Soil Test and Classification

3.6.1 The Competent Person shall:

3.6.1.1 Classify the soil type in accordance with the definitions in Appendix A on the basis of at least one visual and one manual analysis. These tests should be run on freshly excavated samples from the excavation. These tests are designed to determine stability based on a number of criteria: the cohesiveness, the presence of fissures, the presence and amount of water, the unconfined compressive strength, and the duration of exposure, undermining, and the presence of layering, prior excavation and vibration.

3.6.2 Appendix A provides soil mechanics terms and types of field tests used to determine soil classifications.

3.6.3 Cohesion tests are based on methods to determine the presence of clay. There are three classifications:

3.6.3.1 Clay comprises the smallest particles and exhibits good cohesion and plasticity (ability to be molded).

3.6.3.2 Silt comprises the intermediate particles.

3.6.3.3 Sand comprises the largest particles and exhibits no elasticity and virtually no cohesion unless surface wetting is present.

3.6.3.4 The degree of cohesiveness and plasticity depend on the amounts of all three types and water.

3.6.4 When examining the soil, ask the following three questions:

3.6.4.1 Is the sample granular or cohesive?

3.6.4.2 Is the sample fissured or non-fissured?

3.6.4.3 What is the unconfined compressive strength measured in TSF?

3.6.5 Methods of Testing Soils

3.6.5.1 The Competent Person shall perform several tests of the excavation to obtain consistent, supporting data along its depth and length. The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The Competent Person must also determine the level of

protection based on what conditions exist at the time of the test and allow for changing conditions. Refer to Appendix A.

3.6.6 Soil Classification

3.6.6.1 The OSHA Standards define soil classifications within the Simplified Soil Classification Systems, which consist of four categories: Stable rock (greatest stability), Type A, Type B and Type C (least stability).

4.0 UNDERGROUND ASSET VERIFICATION

4.1 Third Party Excavations

4.1.1 If there are multiple excavators on a project, require each excavator to have a separate one call reference number prior to excavating. Require the Company Representative to obtain a copy of each excavator's one-call ticket. In case immediate notification is required, provide the Competent Person at each excavation site shall have access to the names and phone numbers of all facility owner/operator contacts and the one-call center.

4.1.2 Utilize the Pipeline Locating Procedures to mark all Magellan assets for third party excavations.

4.2 Magellan Excavations on Magellan Assets

4.2.1 **One-Call Notification:** Notify appropriate state one-call center at least two working days and no more than ten working days prior to beginning excavation and provide the following information.

4.2.1.1 **Routine Notifications i**nclude at a minimum:

4.2.1.1.1 Township, Range & Quarter Section or a street address,

4.2.1.1.2 Complete and accurate driving directions from the cross streets,

4.2.1.1.3 Landmark, nearest subdivision, etc.

4.2.1.2 **Emergency Notification:** Emergency excavation, maintenance or repairs may be made immediately; however, notify the one-call center and facility owner/operator as soon as reasonably possible.

4.2.2 Request the location of underground facilities be marked at:

4.2.2.1 The entrance pit.

4.2.2.2 Trenchless excavation path.

4.2.2.3 The exit pit.

4.2.3 Require the Competent Person to maintain one-call ticket and reference number from the One-Call center at the excavation site.

4.2.3.1 Texas Specific: Maintain the ticket and reference number where it can be produced within one hour of request from the operator or the Texas Railroad Commission.

4.3 **Marking Preservation:** Preserve all underground facility markings until they are no longer required for safe excavation. If markings are no longer visible, stop the excavation and notify the one-call center for re-marking.

4.4 **White-Lining:** If the project can not be clearly and adequately identified on the locate ticket, clearly mark the area to be excavated using white paint, white flags, white stakes,

or any combination of these, using intervals that show the direction of the excavation, prior to the arrival of the locator.

4.4.1 It is best practice to document markings by pictures or sketches in relation to fixed objects.

4.4.2 The schedule of work on the excavation and the chronological order in which applicable locate tickets are to be marked.

4.4.3 Texas Specific: If an excavation project is too large to mark using white-lining or is so expansive that a full description cannot be provided on a line locate ticket, then conduct a conduct a face-to-face meeting with the operator and the excavator:

4.4.3.1 To discuss the excavation activities.

4.4.3.2 To establish protocols for the interval between each notice to the notification center.

4.4.3.3 The scope of each line locate ticket.

4.4.3.4 The life of each line locate ticket.

4.5 **Verification:** Ensure all utilities are properly marked for exact location and to the best of knowledge there are no unmarked utilities in the vicinity of the proposed excavation before excavation can begin. Visually survey property and section lines for the presence of non-reported utilities.

4.6 **Positive Response:** Prior to excavation, acquire positive response from utilities that the assets have been accurately marked and that it is clear to excavate.

4.7 **Crossing Requirements:** Obtain any crossing requirements (i.e. minimum clearances as established by owner/operator). Retain these requirements at the excavation site for the duration of the project.

4.8 **Interruption of Service:** Coordinate work which requires any temporary or permanent interruption of a facility owner/operator's service with the affected facility owner/operator.

4.9 **Failure to Respond:** If the utility fails to respond to the excavator's timely request for a locate within the time frame that was agreed upon, place a second one-call notification. Proceed with the excavation at the end of two working days, unless otherwise specified in state law, provided the excavator exercises due care in his endeavors.

4.10 **Second Notification:** Excavation shall not begin until a second notice is given to the notification center if :

4.10.1 Knowledge exists of an underground pipeline and an "all clear" or a "no conflict" response has been received from an operator;

4.10.2 Clear evidence (such as a line marker or an above-ground fixture) of the presence of an unmarked underground pipeline in the area of the proposed excavation, and has received an "all clear" or a "no conflict" response from the operator;

4.10.3 Positive response is unclear or obviously erroneous (for example, for a different location or for a different type of underground facility.)

4.10.4 The excavator may begin excavating if there is no positive response within four hours of giving the second notice.

4.10.4.1 Texas Intrastate Specific: Immediately contact the Compliance Coordinator for the Texas area for the following:

4.10.4.1.1 If a utility fails to respond to a locate request in the specified timeframe and a second one-call notification is placed.

4.10.4.1.2 If a utility fails to respond to a second one-call notification request.

4.11 **Mismarked Facilities:** If there are any concerns and/or it is discovered that the facility has been mismarked, contact state one-call agency, or the owner/operator of the utility.

4.11.1 Following this notification, continue the excavation if it can be performed without damaging the facility, unless specified otherwise in state/provincial law.

4.12 **Ticket Life:** If the excavation work continues past the defined ticket life, notify one-call to refresh the ticket.

4.12.1 Texas Specific: Updates are limited to areas yet to be excavated.

4.12.2 Excavator and Operator may agree the life of the locate ticket is more than 14 days provided that:

4.12.2.1 Agreement is in writing

4.12.2.2 Agreement is signed by both parties

4.12.2.3 Both parties must retain a copy of the agreement

4.13 **Stakeholders:** Ensure all stakeholders are notified prior to excavation.

4.14 **On-Site Meeting**:

4.14.1 Conduct a detailed, documented Authorization to Work Permit (Pre-excavation and work site review meeting) prior to the commencement of any excavation.

4.14.2 Discuss any pertinent information and protocols applicable to the excavation site.

4.14.3 Document all personnel (contractor, project personnel, and owner/operator of any foreign pipeline, if needed) attending the safety meeting and place within the job book.

4.14.4 Review the location of the pipeline(s) with the personnel. Prior to excavating in congested pipeline areas, consider requesting a meeting with each affected foreign pipeline company.

4.15 **Training:** Personnel are required to have training on safety equipment to be used during excavation. This will include hazardous gas detectors, fire extinguish, ladders, harnesses, warning signals, signs, earth moving equipment, proper lifting practices, emergency meeting locations, up-stream and down-stream valve locations, air monitoring equipment, and the appropriate measures for blocking the pipeline to the closed position in or during an emergency.

4.16 **Protection of Facilities:** Provide the utmost care to all utilities during excavation and maintenance to the pipeline. Require the excavator to comply with all federal and state safety regulations which includes training as it relates to the protection of underground facilities.

4.16.1 Texas Specific: Comply with the Texas Health and Safety Code, Subpart H.

5.0 MONITORING GUIDELINES OF THIRD PARTY EXCAVATIONS

5.1 **Site Visit: C**onduct a site visit and determine whether or not continuous or periodic monitoring of excavating activities will be required when receiving notification of excavation activity or other activities within Magellan's Easement Tract and or within 50 feet of Magellan Pipelines or other facilities.

5.1.1.1 Excavation Activity includes: Digging by equipment with a mobile digging arm attached, grading, ditching, boring, directional-drilling, dredging, tunneling.

5.1.1.2 Other Activity includes: Clearing, backfilling, hauling of excavation material, mowing, ingress/egress, and deep plowing.

5.1.2 If activity (excavation or other) occurs within 10 to 50 feet from the pipeline and the activity has the "potential to affect" the integrity of the pipeline or facility, determine whether or not continuous or periodic monitoring is required.

5.1.2.1 "Potential to Affect"- an excavation or other activity that has the ability to damage a pipeline or facility, based on an assessment of the location of the proposed excavation or other activity relative to the pipeline. Examples may include but are not limited to Exposing pipeline, heavy surface loads, mowing or cultivation over shallow/exposed pipelines, backfilling an exposed pipeline, installation of foreign utilities over/under pipelines not exposed, parallel work activities, directional drilling, blasting, and dredging.

5.1.3 If activity (excavation or other) occurs within 10 feet and the activity has the "Potential to Affect" the integrity of the pipeline or facility, require a Company Representative to be physically present and provide continuous monitoring during all times the activity is occurring.

5.1.3.1 A Company Representative is not required to provide continuous or periodic monitoring of an excavation activity when the excavation equipment is not power driven and the manual excavation will not have the "Potential to Affect" the integrity of the pipeline.

5.1.4 Complete a Pipeline Maintenance Report if a Company pipeline has been exposed.

5.2 Assets Covered By Mitigation Plan:

5.2.1 When the excavation is to occur within 50 feet of the pipeline, mark the line and submit a report of the activity to the Area Maintenance Coordinator.

5.2.2 When the pipeline is exposed due to excavation, require a Company Representative to remain at the site to inspect the work until there is no further threat of damage to the pipeline.

5.2.3 Anytime the pipeline is exposed, record the relevant pipeline attributes for evaluation of the condition of the pipeline system.

6.0 EXCAVATION GUIDELINES FOR MAGELLAN ASSETS

6.1 **Observer:** Require the excavator to have a qualified observer to assist the equipment operator when operating excavation equipment around known underground facilities.

6.2 **Probing, Exposing, Supporting and Non-Destructive Testing:**

6.2.1 Require a Company Representative with knowledge of the facility/location to be present at all times during the excavation.

6.2.2 Probe all Magellan pipelines within the ROW for exact depth and location with a blunt ended probe bar.

6.2.2.1 Use extreme care during probing so as to not damage the pipelines protective coating.

6.2.3 After locating the exact depth of the pipeline, offset the probes, (a minimum of two probe bars per location) to a minimum of one foot from the pipeline.

6.2.3.1 Place the probes to the side of the line that the operator intends to dig on. (This will allow the operator to view the angle that the pipeline is running).

6.2.4 Commence digging to the side of the pipeline maintaining a 24" (unless otherwise specified in section 9.0) distance until reaching a depth of approximately two feet below the bottom of the pipeline.

6.2.5 Crumb the soil off the top of the pipeline using the back of the digging bucket up to a maximum of 12 inches above the line if deemed safe by Company Representative or Inspection Personnel.

6.2.6 Use a shovel or non-motorized means of excavation to remove the remaining soil and expose the pipe. Once the pipeline has been exposed, use extreme care and ensure the pipeline is properly supported and protected from damage.

6.2.7 Once the pipeline is clearly visible to the observer and excavation operator, continue excavating the pipeline using an excavator.

6.2.8 Once the pipeline has been exposed and excavation is to take place within the 24" specified tolerance zone (unless a larger tolerance zone is specified in the State Specific section at the bottom of this procedure), protect any underground facilities in or near the excavation area using one of the following methods.

6.2.8.1 Methods to consider, based on certain climate or geographical conditions, include hand digging when practical, soft digging, vacuum excavation methods, or pneumatic hand tools.

6.2.8.2 Other mechanical methods or other technical methods that may be developed may be used with the approval of the underground pipeline operator.

6.2.8.3 Hand digging and non-invasive methods are not required for pavement removal.

6.2.9 After completing excavation on the first side of the pipeline, move the probes to the opposite side of the pipeline, and repeat the above process.

6.2.10 Conduct NDE evaluations and/or weld on reinforcing sleeves on all girth welds that will be fully exposed for any reason (routine maintenance, environmental remediation, depth of cover, smart pigging, corrosion, foreign line crossings, relocations, new projects etc.) when the native supporting soil under the pipeline will be removed for a length greater than or equal to the respective pipelines safe maximum (action level) allowable unsupported span length.

6.2.10.1 Determination of safe maximum (action level) allowable unsupported span length is dependent upon the pipe diameter, wall thickness, operating pressures and metallurgical characteristics.

6.2.10.2 Evaluate girth welds if the total excavation length meets or exceeds the safe maximum (action level) allowable unsupported span length. This girth weld evaluation is required even though there may be intermittent supports such as skids, soil plugs and other supports. This is because added stresses from removing the native supporting soil could cause stress to welds beyond the level that weld can sustain due to the welding process they were constructed by. Appropriate maintenance practices in regards to pipe support and soil compaction are just as vital.

6.2.11 Reinforce with sleeves all bell and spigot girth welds that are fully exposed and that have had the native soil around and under the joint removed.

6.3 **Fire Protection:** At any excavation site, provide a minimum of two work ready fire extinguishers at all times. All excavation sites will also have, maintain and man all other OSHA or state required safety equipment.

6.4 **Alignment:** Do not allow under any circumstances the excavator to line the center of excavator over the center of the pipeline.

6.4.1 Align the excavator in such a manner that the boom of the excavator will pull straight down the long axis of the pipeline maintaining a minimum of one-foot distance from the pipeline.

6.5 **Side Cutters:** Obtain approval from a Company Representative prior to using side cutters for excavating a Company pipeline.

6.6 **Damage:** If damage is discovered or caused to an underground facility, notify the facility owner/operator through the notification center immediately but not later than two hours following the damage incident. Report all breaks, leaks, nicks, dents, gouges, grooves, or other damages to facility lines, conduits, coatings or cathodic protection.

6.6.1 If damage results in an emergency situation such as a release or injury, utilize the Emergency Response procedure.

6.6.2 If damage is caused to an underground facility, do not cover the exposed facility without approval of the facility owner/operator.

6.6.3 Texas Specific: Report all damage to an underground facility to the Regulatory Compliance Coordinator responsible for Texas.

6.7 **Documentation:** Complete Daily Excavation Checklist on the ATW and place in job book.

7.0 CONDUCTING EXCAVATIONS WITHIN A FACILITY

7.1 When conducting excavations within a Company station, terminal, or other facility located inside a bounded fence:

7.1.1 Conduct a detailed review of facility drawings and alignment sheets.

7.1.2 Locate and mark all utilities including but not limited to cathodic protection cables, anodes, electrical wiring, etc. within 2 feet of proposed excavation as described in the Pipeline Locating Procedure and the Pipeline Marking Procedure. For excavations performed by a contractor, require contractor personnel to locate and mark the line in addition to Company Personnel.

7.1.3 Protect all utilities during excavation and the maintenance to the pipeline. (Review section 3.1.1 and 5.0 of this procedure prior to excavating. Consideration shall be given to the following:

7.1.3.1 Consider hand digging and or vacuum excavation to the depth of excavation if practical

7.1.3.2 Consult with Facility Supervisor to determine whether or not to shut off power or a section/grid of the facility power until excavation activity is complete

7.1.3.3 When encountering frozen ground excavation, consider utilization of THAWZALL unit to thaw the area to required depth of proposed excavation.

7.1.4 Close out the one-call ticket properly as described in the One Call Program. The Asset Locator will obtain Field Supervisor or designee approval and signature on the One Call ticket prior to closing the one-call ticket and retain at the location.

7.2 Require a Company Representative with knowledge of the facility to be present prior to and during excavation.

7.3 Gain approval from a Company representative prior to excavating without a flat bar welded across the teeth of an excavation bucket.

7.4 Require an Excavation Observer to assist the equipment operator when operating excavation equipment around known underground facilities.

8.0 BACKFILLING

8.1 Minimize the length of ditch that is open at any time by padding and backfilling closely behind the completion of maintenance repairs and or lowering-in. Ensure that as-built surveys have been completed before padding or backfilling pipe.

8.2 Require a Company Representative to be present whenever any backfilling is occurring.

8.3 Exercise extreme care while backfilling to prevent damage to pipe and coating. If applicable, require the contractor to repair any damages at their expenses if pipe or coating is damaged.

8.4 Immediately before padding and backfilling, inspect the ditch and backfill material for rocks, large clods, stumps, skids, trash, and other foreign material that could interfere with the accuracy of future locates. Remove as necessary.

8.5 Remove water and snow from the ditch prior to and during backfilling, except at streams and river crossings.

8.6 In rocky areas or if required by Company Representative, Earth Pad the pipeline to protect pipe and coating. A Rock Shield may be required in conjunction with earth padding.

8.7 Provide adequate pipeline support prior to backfilling if needed (when pipe is not resting on ground). Consider using dirt plugs or sandbags at spacing intervals not to exceed 20 feet particularly in areas where additional weight has been applied by installation of sleeving.

8.8 Provide support for all exposed girth welds (including bell and spigot joints) (supports to be placed on each side of the girth weld) via sandbags or equivalent settlement resistant supports prior to backfilling.

8.9 For backfill material placed 6" over the top and bottom of the pipeline, ensure backfill select material is used with sufficient soil in the mixture to prevent void spaces beneath the pipe and damage to the pipe coating as the select backfill is placed in the ditch. Do not permit any large rocks or other hard objects in select backfill area.

> **NOTE**: Segregated top soil from the right-of-way shall not be used as padding material

8.10 If select backfill material cannot be obtained from excavated spoil, utilize a padding machine or haul in padding material and place it around the pipeline. Place padding at least 6 inches below and above the pipeline.

8.11 Gain approval from the Company Representative prior to purchase or use of hauled padding material.

8.12 If needed, replace large rock taken from the ditch with those rocks keeping the rocks at least 6 inches away from the pipe up to existing rock level unless otherwise specified in the right-of-way and permit stipulations.

8.13 Compact the backfill so that it is equal to that of the undisturbed area across cultivated land, hayfield, pastures and residential land unless otherwise specified. Compact the backfill solidly at crossing of terraces, levees, canals and ditches.

8.14 In areas where the pipeline crosses under foreign lines and field tiles, backfill the ditch with approved material and compact it to prevent settlement.

8.15 Supply and install ditch breakers as directed by Company Representative. Do not utilize top soil to fill sacks.

9.0 STATE SPECIFIC EXCEPTION TO 24" TOLERANCE ZONE

9.1 Comply with state requirements for tolerances zones more than 24" as shown below.

9.1.1 Illinois- Chicago- 36"

9.1.2 North Carolina- 30"

9.1.3 South Carolina- 60"

9.1.4 Tennessee- 48"

10.0 LINKS

10.1 Training Matrix

10.2 Air Monitoring Performance Procedure

10.3 Respiratory Protection Procedure

10.4 OSHA Excavation Safety Regulations

10.5 Authorization to Work Permit

10.6 Verification of Rehabilitation Excavation Report

10.7 Appendix A — Soil Classifications

10.8 Appendix B — Sloping and Benching

10.9 Pipeline Locating Procedure

10.10 Texas Health & Safety Code (subpart H)

10.11 Emergency Response Procedure

11.0 DEFINITIONS

11.1 **Benching**: A method of protecting personnel from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between

11.2 **Cave-In**: The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.

11.3 **Competent Person**: One who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them. For U.S. facilities, the Competent Person shall be knowledgeable of the requirements of 29 CFR 1926.650–652.

11.3.1 Company employees or designated Company representatives who are qualified as a Competent Person shall not assume the Competent Person position for a Contractor. Contractors are to supply their own Competent Person. It is not required to have a Company Competent Person and a Contractor Competent Person at each excavation job.

11.4 **Damage**: Includes but is not limited to (A) defacing, scraping, displacement, penetration, destruction, or partial or complete severance of an underground facility or of any protective coating, housing, or other protective device of an underground facility; (B) weakening of structural or lateral support of an underground facility that affects the integrity of the facility; or (C) failure to properly replace the backfill surrounding an underground facility.

11.5 **Emergency**: A situation that endangers life, health, or property or a situation in which the public need for uninterrupted service and immediate re-establishment of service if services are interrupted compels immediate action.

11.6 **Excavation**: Any man-made cut, trench or depression in the earth's surface, formed by earth removal.

11.7 **Hand digging**: Any movement of earth using non-mechanized tools or equipment, soft digging, or vacuum excavation. Hand digging includes but is not limited to digging with shovels, picks, and manual post hole diggers.

11.8 **Hazardous Atmosphere**: An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

11.9 **Movement of earth**: Any operation in which earth, rock, or other material in the ground, any structure, or any mass of material is moved, removed, disturbed, or otherwise displaced by hand digging, mechanized equipment or tools of any kind, or explosives, and includes but is not limited to augering, backfilling, boring, cable or pipe plowing and driving, compressing, cutting, demolition, digging, ditching, dragging, dredging, drilling, grading, plowing-in, pulling-in, razing, rendering, ripping, scraping, tilling of earth at a depth exceeding 16 inches, trenching, tunneling, or wrecking.

11.10 **Mechanized equipment or tool**: A piece of equipment or a tool operated by mechanical power, including but not limited to a tractor, trencher, bulldozer, power shovel, auger, backhoe, scraper, drill, cable or pipe plow and/or driver, and other equipment used to plow in or pull in cable or pipe.

11.11 **Protective System**: A method of protecting personnel from cave-ins, from material that could fall or roll from an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

11.12 **Ramp**: Any inclined walking or working surface that is used to gain access to one point from another and is constructed from earth or from structural materials such as steel or wood.

11.13 **Registered Professional Engineer**: A person who is registered as a professional engineer in the state where the work is to be performed.

11.14 **Shield**: A structure that is capable of withstanding the forces imposed on it by a cave-in and thereby protects personnel within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses.

11.15 **Shoring**: Shoring is another protective system or support system. Shoring utilizes a framework of vertical members (uprights), horizontal members (whales), and cross braces to support the sides of the excavation to prevent a cave-in. Timber, aluminum, hydraulic and mechanical shoring are common examples.

11.16 **Sloping**: A method of protecting personnel from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences such as soil type, length of exposure, and application of surcharge loads.

11.17 **Soft digging**: Any movement of earth using tools or equipment at use air or water pressure as direct means to break up soil or earth for removal by vacuum excavation.

11.18 **Surcharge Loads**: Generated by the weight of anything in proximity to the excavation, push starts for a cave-in (anything up top pushing down). Common surcharge loads include:

11.18.1 Weight of spoil pile

11.18.2 Weight of nearby buildings, poles, pavement or other structural objects

11.18.3 Weight of material and equipment

11.19 **Tolerance zone**: Half the nominal diameter of the underground pipeline plus a minimum of 24" (unless otherwise specified in section 9.0) on either side of the outside edge of the underground pipeline on a horizontal plane.

11.20 **Trench**: A narrow excavation below the surface of the ground, less than 15 feet wide, with a depth usually greater than the width.

11.21 **Undermining**: Undermining can be caused by such things as leaking, leaching, caving or over-digging. Undermined walls can be very dangerous.

11.22 **Vibration**: A force that is present on construction sites and must be considered. The vibrations caused by backhoes, dump trucks, compactors and traffic on job sites can be substantial.

11.23 **White-lining**: An excavator's designation on the ground of the area to b excavated using white paint, white flags, white stakes, or any combination of these.

Figure 1

Figure 1 – Preliminary Decisions

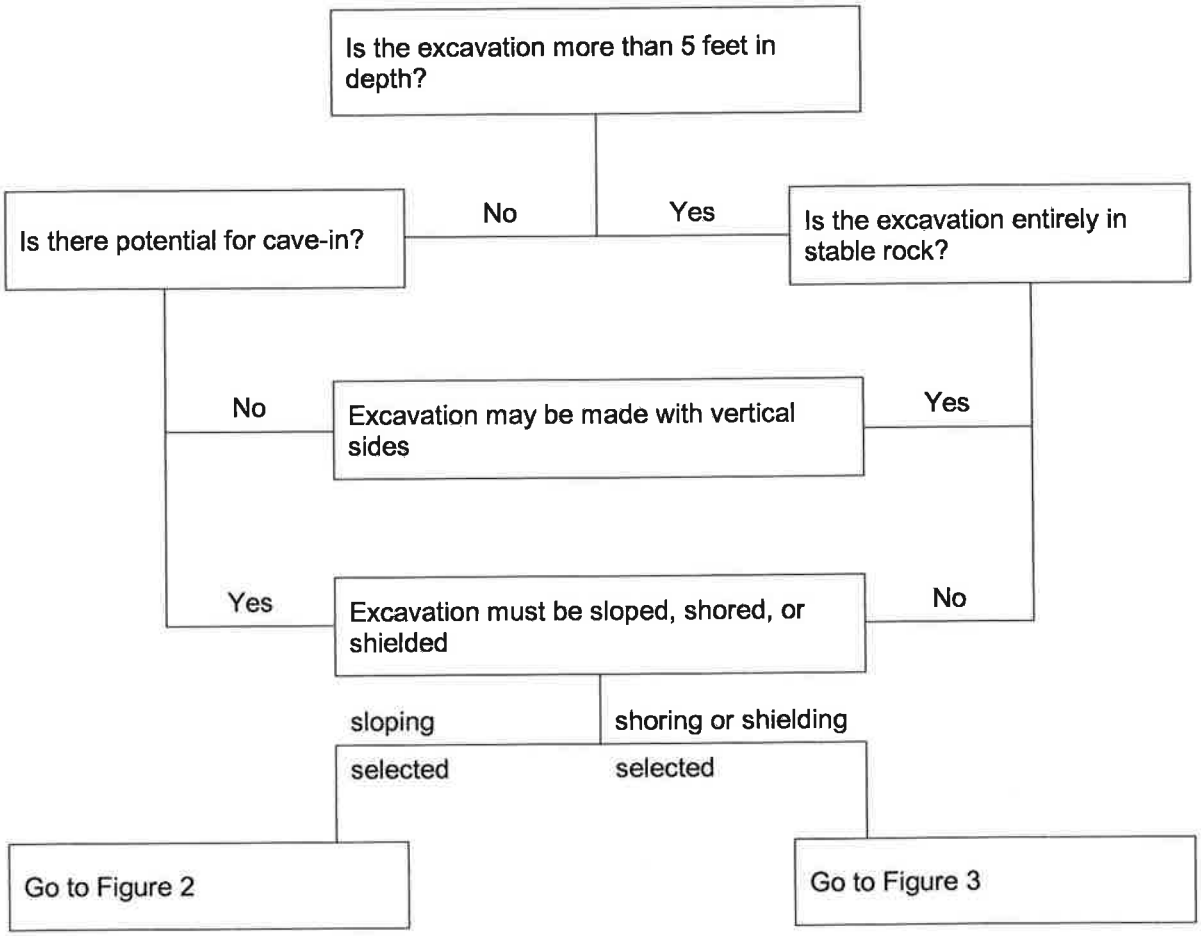


Figure 2

Figure 2 – Sloping Options

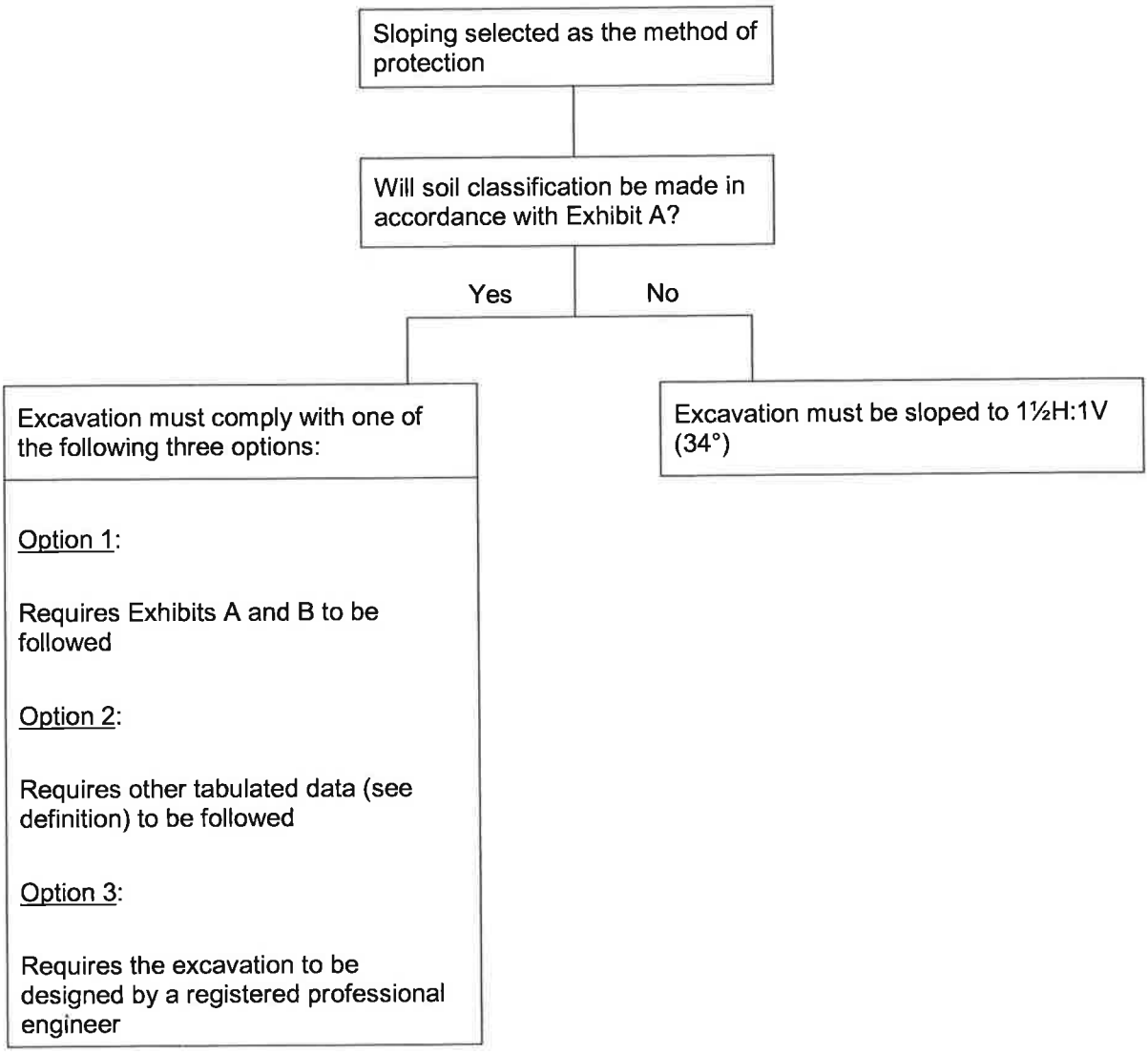
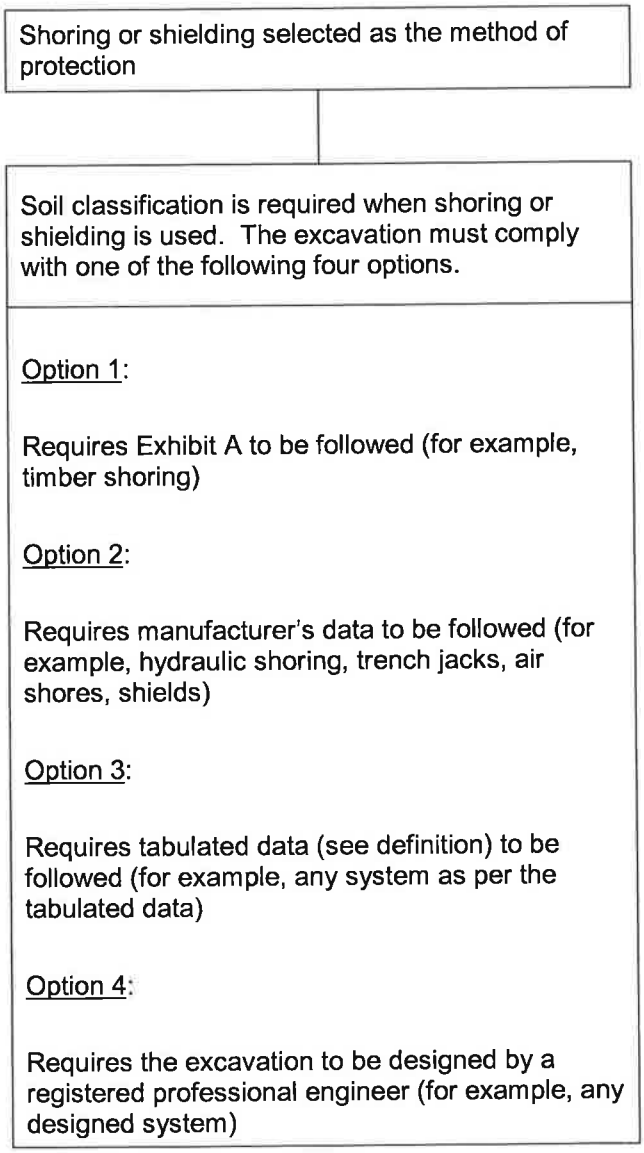


Figure 3

Figure 3 – Shoring and Shielding Options



System Integrity Plan Change Log

Date	Change Location	Change By	Approved By	Brief Description of Change
9/9/05	All	Clyde Clausen	Mike Pearson	Conducted Annual Review
9/9/05	2.0	Mike Orr	Mike Pearson	Changed Note from 24" to 18"
9/9/05	2.4.6.1	Mike Orr	Mike Pearson	Eliminated 3.9 and moved to 2.4.6.1
9/9/05	2.4.7	Mike Orr	Mike Pearson	Eliminated 3.9 and moved to 2.4.7
9/9/05	3.9	Mike Orr	Mike Pearson	Eliminated
9/9/05	3.10 through 3.13	Mike Orr	Mike Pearson	Eliminated anything that was duplicated within Appendix A and B throughout 3.10 through 3.13.
9/9/05	4.0	Mike Orr	Mike Pearson	Added Section 4.0 Line Locate and Excavation Process.
9/9/05	5.0	Mike Orr	Mike Pearson	Added Section 5.0 Backfilling
9/20/05	3.7.1	Mike Orr	Mike Pearson	Deleted "who is registered in the state where work Will be performed".
2/2/06	5.7	Clyde Clausen	Mike Pearson	Added Paragraph
2/16/06	4.1	Clyde Clausen	Mike Pearson	Added Paragraph – does not impact OQ
10/30/06	All	Clyde Clausen	Mike Pearson	Conducted Annual Review
10/31/06	2.0	Clyde Clausen	Mike Pearson	Added Note Before any excavation begins, Contact Pipeline Integrity for review of smart pig log indicating pipeline appurtenances. (E.g. TORs, Nipples, Taps, Small Diameter Connections)
10/31/06	3.1	Clyde Clausen	Mike Pearson	Minor Modification to Paragraph
10/31/06	3.1.1	Clyde Clausen	Mike Pearson	Added: Before any excavation begins, Contact Pipeline Integrity for review of smart pig log indicating pipeline appurtenances. (E.g. TORs, Nipples, Taps, Small Diameter Connections)
10/31/06	3.3	Clyde Clausen	Mike Pearson	Minor Modification to Paragraph
10/31/06	3.6	Clyde Clausen	Mike Pearson	Added 3.6 Hazardous Atmosphere Testing Section.
10/31/06	3.7	Clyde Clausen	Mike Pearson	Added 3.7 Confined Space Section
10/31/06	4.0	Clyde Clausen	Mike Pearson	Added Conducting Excavations Within A Facility Section
10/31/06	5.0	Clyde Clausen	Mike Pearson	Added Excavation Observation and Monitoring Section
10/31/06	6.0	Clyde Clausen	Mike Pearson	Modified Section 6 in accordance with Common Ground Alliance Excavation Best Practices.
10/31/06	7.1	Clyde Clausen	Mike Pearson	Added Section 7.1
10/31/06	7.8	Clyde Clausen	Mike Pearson	Minor Modifications to Paragraph
02/02/07				Removed Daily Inspection Checklist link
12/14/07	10.4, 10.5, 10.7, 10.9, 10.10, 10.17, 10.19, 10.23	Dennis Vasicek	Clyde Clausen	Added definitions
12/14/07		Dennis Vasicek	Clyde Clausen	Procedure rewrite

12/14/07		Dennis Vasicek	Clyde Clausen	Incorporated CGA and TRRC recommendations for compliance
12/14/07		Dennis Vasicek	Clyde Clausen	Conducted Annual Review
4/1/08	2.3.1	Dennis Vasicek	Clyde Clausen	Modified 2.3.1 to include job plans will provide specific guidance and identification of the maximum pipe support spacing for each diameter, wall thickness, grade of pipe, and type of girth joint to be encountered on subject line segment.
4/1/08	6.2.10	Dennis Vasicek	Clyde Clausen	Moved paragraph from backfilling section to probing, exposing, supporting and NDE section.
4/1/08	6.2.10.1	Dennis Vasicek	Clyde Clausen	Moved paragraph from backfilling to probing, exposing, supporting and NDE.
4/1/08	6.2.10.2	Dennis Vasicek	Clyde Clausen	Moved paragraph from backfilling to probing, exposing, supporting and NDE.
4/1/08	6.2.11	Dennis Vasicek	Clyde Clausen	All exposed bell and spigot girth welds will be reinforced by means of sleeving
4/1/08	8.7	Dennis Vasicek	Clyde Clausen	Modified Paragraph to consider support at intervals of 20 feet particularly when additional weight is added due to sleeving.
4/1/08	8.8	Dennis Vasicek	Clyde Clausen	All exposed girth welds (including bell and spigot joints) shall be supported via sandbags or equivalent settlement resistant supports prior to backfilling
10/1/08	3.1.14	Dennis Vasicek	Clyde Clausen	Changed 18" tolerance zone to 24"
10/1/08	6.2.4	Dennis Vasicek	Clyde Clausen	Changed 18" tolerance zone to 24"
10/1/08	6.2.8	Dennis Vasicek	Clyde Clausen	Changed 18" tolerance zone to 24"
10/1/08	9.0	Dennis Vasicek	Clyde Clausen	Created section 9.0 State Specific Exception to 24" Tolerance Zone. Listed the states that specify more than 24".
10/1/08	11.19	Dennis Vasicek	Clyde Clausen	Changed 18" tolerance zone to 24"
12/16/08		Dennis Vasicek	Clyde Clausen	Conducted annual review, made minor grammatical modifications
3/31/09	5.2	Dennis Vasicek	Clyde Clausen	Added Longhorn Specific guidance to Section 5.0.
3/31/09	6.2.1	Dennis Vasicek	Clyde Clausen	Added section 6.2.1 to provide additional clarity to requirement.
8/21/09	All	Clyde Clausen	Doug Chabino	Conducted Annual Review, see modifications below
8/21/09	2.2.2	Clyde Clausen	Doug Chabino	Added paragraph requiring all employees to ensure ES has conducted a site environmental review and provided clearance prior to any excavation activities
8/21/09	2.2.3	Clyde Clausen	Doug Chabino	Added paragraph requiring ES be notified if any historic contamination is discovered during excavation
8/21/09	2.4.10	Clyde Clausen	Doug Chabino	Moved 2.4.10 out of Competent Person responsibilities into section 2.3.
8/21/09	5.2	Clyde Clausen	Doug Chabino	Removed Longhorn specific and replaced with Assets covered by mitigation plan
8/21/09	7.1.2	Clyde Clausen	Doug Chabino	Revised 7.1.2 and required utilities within 2 feet of proposed excavation be properly marked and located by Company Personnel
8/21/09	7.1.3	Clyde Clausen	Doug Chabino	Added paragraph- Asset Locator will obtain Field Supervisor approval prior to closing ticket
8/21/09	7.1.4	Clyde Clausen	Doug Chabino	Modified Paragraph to consider hand digging or vacuum excavation to the depth of excavation
	1.2	Kelli Riddle	Clyde Clausen	Removed employees and contractors
	2.1, 2.3.5			removed
7/1/10	2.1.2	Kelli Riddle	Clyde Clausen	Clarified that before excavation is conducted along the ROW the ES has been notified and performed the appropriate environmental reviews (i.e. wetlands, T&E species, cultural resources). This does not apply to activities inside the fence.
9/10/10	3.3.1	Clyde Clausen	Doug Chabino	Clarified requirement to complete the confined space entry section of the ATW.

9/10/10	7.1.2	Clyde Clausen	Doug Chabino	Added clarification to locate CP cables, anodes, and electrical wiring
04/08/11	7.1.4	Dyan Gillean	Doug Chabino	Revised wording on closing a one call ticket for excavation within a facility
9/1/11	All	Clyde Clausen	Doug Chabino	Conducted Annual Review
9/1/11	2.1.3	Clyde Clausen	Doug Chabino	Added Safety Specialist to paragraph
9/1/11	2.1.2 & 2.2.2	Clyde Clausen	Doug Chabino	Moved 2.1.2 to 2.2.2
9/1/11	2.3.8	Clyde Clausen	Doug Chabino	Added paragraph to note to require competent person to approve and confirm excavation site is safe prior to entry
9/1/11	4.14.4	Clyde Clausen	Doug Chabino	Modified Paragraph to include consider requesting a meeting with each affected foreign pipeline company
9/1/11	6.2.1	Clyde Clausen	Doug Chabino	Modified Paragraph to include Magellan Representative with knowledge of the facility
9/1/11	7.2	Clyde Clausen	Doug Chabino	Modified Paragraph to include Magellan Representative with knowledge of the facility
9/1/11	2.2.1	Clyde Clausen	Doug Chabino	Modified Paragraph to include guidance in case inherent mechanical stresses are discovered prior to excavation
9/1/11	7.1.5 & 7.1.3.1	Clyde Clausen	Doug Chabino	Moved 7.1.5 to 7.1.3.1
9/1/11	7.1.3.2	Clyde Clausen	Doug Chabino	Added new paragraph to consult with Facility Supervisor to determine whether or not to shut off power until excavation work has been completed
9/1/11	7.1.3.3	Clyde Clausen	Doug Chabino	Added new paragraph to consider thawing frozen ground prior to excavation
12/31/11				2012 annual review complete

QUESTION #8g

PUBLIC AWARENESS

1.0 OBJECTIVE

1.1 The objective of this initiative is to promote public awareness of underground utilities, damage prevention and emergency preparedness. Collectively, this initiative will enhance public safety and minimize damage to property, the environment and Company assets. The Company's Public Awareness Program was developed to comply with the standards established in American Petroleum Institute's (API) Recommended Practice (RP) 1162.

1.2 Company management supports Public Awareness through Company policy, management participation, and allocation of resources and funding as described in the System Integrity Plan Magellan Management Commitment and Support Introduction and the Management Support Cover Letter.

1.3 Public Awareness is a critical component of our overall safety program. The Public Awareness Program includes the following lines:

Company Name	Product	PHMSA Operator Identification Number
Magellan Pipeline Company, L.P.	HVL	22610
Magellan Pipeline Company, L.P.	Refined	22610
Magellan Pipelines Holdings, L.P.	Refined	31579
Magellan Terminals Holdings, L.P.	Crude	31580
Magellan Terminals Holdings, L.P.	Refined	31580
Magellan Ammonia Pipeline, L.P.	Ammonia	12105
Osage Pipe Line Company, LLC	Crude	14391

2.0 DESCRIPTION

2.1 The Company's Pipeline Awareness Program for DOT 195 jurisdictional lines will include information and provide instruction to the affected public, emergency officials, local public officials and excavators on the following:

2.1.1 Pipeline purpose and reliability.

2.1.2 Awareness of hazards or potential hazards and prevention measures.

2.1.3 Damage Prevention Awareness.

2.1.4 One Call requirements.

2.1.5 How to recognize, report and respond to leaks and/or emergencies involving Company operated pipelines and facilities.

2.1.6 How to identify the location of Company operated pipelines, rights-of-way, facilities, and description of the purpose of pipeline markers and the information on them.

2.1.7 Emergency Preparedness Communications.

2.1.8 The "Call Before You Dig!" Campaign and the national One Call number **811.**

2.1.9 How to access a list of pipeline operators through the National Pipeline Mapping System (NPMS).

2.1.10 How to obtain additional information.

2.2 This initiative provides guidance to Company employees on the communication of Emergency Response Plans (ERPs) to Local Emergency Planning Committees (LEPC) and Emergency Response Agencies (ERA).

3.0 STANDARDS

3.1 The One Call Supervisor and Public Awareness & Communications Specialist shall:

3.1.1 Administer the Public Awareness Program for DOT jurisdictional assets.

3.1.2 Determine annually, the acceptable pipeline awareness programs and annual mailings for the upcoming year. Develop the message content of these programs as described in the Message Content Guidelines.

3.1.3 Perform an annual audit of the Public Awareness Program to ensure the program has been developed and implemented according to the guidelines in RP 1162. Document on the Annual Self Assessment.

3.1.4 Perform an Effectiveness Evaluation of the Public Awareness Program before September 1st every four years in accordance to the guidelines in RP 1162.

3.1.5 Maintain all program evaluations, including current results, follow-up actions, expected results and annual assessments for five years.

3.1.6 Implement the Annual Mailings Procedure annually.

3.1.7 Conduct a pretest of public awareness materials for audience appeal, message clarity, understandability, and retention before they are widely used. A pretest can be performed using a small representative audience that is not involved with the development of the Public Awareness Program.

3.1.8 Annually review and update the public education and damage prevention section of Magellan's Internet Site, if necessary.

3.1.9 Maintain and annually update the Public Awareness Folder in Livelink and the Emergency Response Guide.

3.1.10 Coordinate with Asset Integrity and Operations personnel to ensure that the ERP Summary Folders are prepared, maintained and distributed to the appropriate LEPC and/or specific local ERAs.

3.1.11 Approve any deviations from the print ad or radio ad standards upon request.

3.1.12 Oversee public education efforts for assets covered per the Mitigation Plan to ensure that ERAs within each county that the pipeline passes through will be contacted annually (not to exceed 15 months) in person and provided with maps of the system.

3.2 The Operations Manager shall:

3.2.1 Communicate Emergency Response Plans to LEPC/ERAs.

3.2.2 Maintain a current address listing of LEPC/ERAs that could respond to a Company emergency. Provide this mailing list to the Public Awareness and Communications Specialist for the annual Mail Out Program.

3.2.3 Maintain an ongoing LEPC/ERAs meeting schedule.

3.2.4 In addition to annual mailings to LEPCS/ERAs, conduct meetings on a rotating basis, with a minimum of 25% of the listed LEPC/ERAs once every 12 months, not to exceed 15 months. Conduct a meeting with each listed LEPC/ERAs at least once in a four-year calendar period.

3.2.5 Conduct meetings following the LEPC/ERA Meeting Requirements. For Intrastate pipelines in Texas, conduct face-to-face meetings with designated ERA officials annually per the LEPC/ERA Meeting Requirements.

3.2.6 Complete the LEPC/ERA/Stakeholder Meeting Form for each meeting. Distribute the appropriate updated response plan documentation (ERP, ERAP, etc.) during each meeting.

3.2.7 Complete, at a minimum, one supplemental outreach activity per year within each

operating area. Consider external factors along the pipeline system and assess if some additional level of public awareness communications is warranted of if other supplemental/enhanced outreach activities are needed.

3.2.7.1 Use the Relevant Factors Assessment in making the evaluation and the Approved Media and Delivery Methods Procedure to determine the appropriate activity.

> **NOTE**: There may be circumstances where multiple outreach activities are required.

3.2.7.2 For each Supplemental/Enhanced Outreach Activity, complete the LEPC/ERA/Stakeholder Meeting Form, provide supporting documentation and send to the District Office or location and the Public Awareness and Communication Specialist.

3.2.8 Maintain copies of all materials provided to each stakeholder audience in the local files for five years.

3.2.9 File the completed LEPC/ERA/Stakeholder Meeting Form for five years.

3.3 **The Employee shall**:

3.3.1 Use the LEPC/ERA/Stakeholder Meeting Form to conduct and document pipeline safety awareness discussions with ERAs, public education and third party damage prevention stakeholder groups. Forward completed forms to the appropriate area office.

3.4 **The One Call Coordinator shall**:

3.4.1 Request documentation from state One Call Centers for their community outreach or public awareness activities. Information may be obtained by website if available or phone solicitation. Sort the information by state and retain for five years.

> **NOTE**: Most state One Call Centers provide public awareness activities; Magellan can incorporate these activities into its Public Awareness Program.

3.4.2 Request address listings from each applicable state One Call agency and the Company internal database of all contractors and individuals engaged in excavation activities during the previous 12 months in each state where Company assets are located. Forward the data to the vendor for incorporation into the annual mailings.

3.4.3 Advise the Operations Managers, Asset Integrity Supervisors, and Operations Control Manager of the annual mail out messages at least ten days before distributing the mail outs.

3.4.4 Utilize the Company Damage Prevention Newsletter to inform employees about the Public Awareness Program objectives.

3.4.5 File the LEPC/ERA forms and Supplemental/Enhanced activity documentation in the appropriate Damage Prevention folder in Livelink.

3.5 **The Regulatory Compliance Coordinator shall**:

3.5.1 Initiate biennial (beginning January 15, 2005 and every two years thereafter) Educational Center Surveys in accordance with the Texas Public School Survey Procedure for Railroad Commission of Texas regulated assets.

3.6 **The Operations Supervisor in Texas shall**:

1.1.1 Conduct public school surveys (psb) upon notification from the Regulatory Compliance Coordinator. Forward the PSB Survey information to the Regulatory Compliance Coordinator within 60 days of the request, but no later than December 15th.

SYSTEM INTEGRITY PLAN CHANGE LOG

Date	Change Location	Change By	Brief Description of Change
1/1/05	All	Greg Walker	Conducted **2004** Annual Review see change log
1/1/05	3.2.6		Moved responsibility to develop and maintain lists of Emergency responders to Operations Supervisors as new Section 10.3.1.5
1/1/05	3.2.1		Added Public Education and Third Party Damage Prevention Program
1/1/06	All	Greg Walker	Conducted **2005** Annual Review see change log
1/1/06	2.1		Deleted the objectives of a public awareness program
1/1/06	3.0		Deleted information about the federal stds. the procedure was developed under.
1/1/06	3.0		Developed Magellan's "Commitment to the Program."
1/1/06	3.2.2		Deleted Operator's responsibility of overseeing and approving budgetary responsibility.
1/1/06	3.5		Changed OneCall Analyst to OneCall Coordinator
1/1/06	3.5.2		Deleted request for address of Contractors form OneCall and documentation of Awareness Program distributed. Also requirement to have this information forwarded to Operations Mgr by Dec 1st.
1/1/06	3.5.3		Deleted requirement to establish and maintain the Public Awareness Program and annual review of program.
1/1/06	3.5.4		Deleted references to National Alliance Programs.
1/1/06	Multiple		Added content for API RP1162 compliance.
1/1/06	3.1.6		Added "to determine if additional outreach programs are needed."
1/1/06	3.2.4		added
1/1/06	3.4.1, 3.4.2		clarified
1/1/06	3.2.3		Added retention time and location
1/1/06	3.2.2		Rephrased and defined summary report
1/1/07	All	Greg Walker	Conducted **2006** Annual Review see change log
1/1/07	1.0		Added Management Support Documentation: E1 Goals and Management Support Cover Letter.
1/1/07	3.1.3		Added Effectiveness Evaluation Requirements
1/1/07	2.1.1, 2.1.7		added
1/1/07	3.2.1.1		added
9-10-07	All	Greg Walker	Conducted **2007** Annual Review see change log
9/10/07	3.2.1.6		Moved this to new section entitled, **"3.3 Longhorn Specific Requirements:"**
9/10/07	3.4.1		Added One Call membership requirement in response to PHMSA Clearing House comments.
9/10/07	3.2.2		Added additional Relevant Factors and clarified direction for Supplemental Outreach Activities in response to PHMSA Clearing House comments.
9/10/07	3.3.1		Added new wording to this section
10/08/08	All	Greg Walker	Conducted **2008** Annual Review see change log
10/08/08	3.1.8		Deleted – Monitor activities and determine if additional is needed.
10/08/08	3.1.10		Added from E12-Maintain Public Awareness folder and ER Guide. This replaces the previous ERP distribution process.
10/08/08	3.2.2.5		Added location for supplemental documentation
10/08/08	3.3.1		Added administrator for Longhorn. Moved previous 3.3.1 to 3.3.2
10/08/08	3.4.1		Deleted Operations Manager or Asset Integrity (AI) Supervisor and changed to appropriate area office.
10/08/08	3.5.1		Added option for website retrieval and retention time. Deleted distribution to Operations Managers/ AI Supervisors.
10/08/08	3.5.2		Added Manager of Damage Prevention for incorporation into the annual mailings. Deleted distribution to Operations Manager/AI Supervisors.
10/08/08	3.5.4		Added: Include PA objectives in One-Call newsletter
10/08/08	3.5.5		Added: File Supplemental Documents in Livelink folder
1/1/09	3.6, 3.7		Moved from SIP 7.08
02/01/09	3.5.2		Changed Title to Mgr of Damage Prevention and Design Services
7/28/09	All	Greg Walker	Conducted 2009 Annual Review see change log
07/28/09	3.1.7	Mike Hampton	Changed "Pipeline" to "Public"
07/28/09	3.2		Changed the title to, "Assets Covered Per Mitigation Plan"
07/28/09	3.3.2.3		Added "And Design Services"
07/28/09	3.3.4		Deleted Section Maintain the information sent from the One Call Coordinator in the Local file for five years. This information includes documentation of the Public Awareness activities that each agency participated in and address listings of individuals and contractors engaged in excavation activities.
07/28/09	3.3.5		Added "For Five Years"

07/28/09	3.4		Deleted Section
07/28/09	3.6.2		Added " And Magellan's Internal Database" Deleted "Sort this information by operating area and forward to the manager of Damage Prevention and Design Services" Added "Forward the data to Vendor"
07/28/09	3.6.4		Deleted "Include Public Awareness Objectives in the One Call Newsletter." Added " Utilize Magellan Damage Prevention Newsletter to inform employees about the Public Awareness program objectives"
01/01/11	2.1		Removed DOT 192
	3.1		Changed Mgr of Design Services and Compliance to One Call Team Leads
	3.1/3.2.2/3.2.7.2		Changed title to One Call Team Leader
8/29/11	2.1		Added list of specific pipeline assets covered by the PAP.
8/29/11	3.1		Changed title to One Call Supervisor Public Awareness Comm. Spec.
	3.1.4		Added date
8/29/11	3.2.2		Changed title to Public Awareness Comm. Spec.
8/29/11	3.2.7.2		Changed title to Public Awareness Comm. Spec.
12/31/11	All		2012 Annual Review complete

QUESTION #8h

EMERGENCY RESPONSE

1.0 OBJECTIVE

1.1 This initiative defines the actions to be taken by employees in the event of an emergency. All emergency situations require an immediate response to protect the public and the environment. This initiative is a synopsis of the actions found in emergency response plans and the System Integrity Plan (SIP), and provides a mechanism to ensure those plans are seamlessly integrated.

2.0 DESCRIPTION

2.1 In any emergency, there are a series of response actions that should be taken. The order in which they are taken will depend on the circumstances at hand. These measures include but are not limited to:

2.1.1 Immediate Actions – Preserving life by evacuations, medical attention, or sheltering.

2.1.2 Defensive Measures – Closing valves, deploying equipment, and fighting incipient fires.

2.1.3 Notifications – Alerting supervisors, Company response personnel, government agencies, local responders, and contractors or Spill Response Companies (OSROs).

2.1.4 Company Response – Mobilizing additional personnel from adjacent areas including: Environmental Specialists, Safety Specialist, Emergency Response Coordinators, Legal, Public Information, and Insurance.

2.1.5 Contractor Response – Mobilizing OSROs, air monitoring companies, environmental contractors, aviation companies, emergency management contractors, and repair contractors.

2.1.6 Updates – informing management, government agencies, investor relations, and customers.

2.2 During the initial stages of an emergency event, SIP may require multiple notifications, each with a different purpose.

2.2.1 Calling 911 alerts emergency responders in the immediate area.

2.2.2 Notifying a supervisor is required by Incident Reporting, which results in the notification of an employee's chain of command as well as Legal and Insurance.

2.2.3 Calling the Company Release Reporting Number as required by the Release Reporting Procedure, has the main purpose of providing information to Operations Control (for ammonia) or an Environmental Specialist for reporting the incident to state and federal agencies. It has an additional purpose of notifying personnel in safety, emergency response, the operations control center and operations, who can support the field response, or who can assist to lessen the impact the emergency may have on the Company's operations.

2.3 Emergency response actions can be found in Company emergency plans such as:

2.3.1 Pipeline Response Plans for pipeline or pipeline facility emergencies.

2.3.2 Integrated Contingency Plans (also referred as ICPs or FRPs), for emergencies at EPA regulated facilities.

2.3.3 Emergency Response and Action Plans (ERAP), found in the front of a facility's ICP.

2.3.4 Ammonia Plans.

2.3.5 Hurricane Plans.

2.4 Emergency response actions can also be found in elements of the SIP, including Incident Reporting, Release Reporting Procedure, Emergency Operations, and Emergency Code Red Investigation Procedure.

2.4.1 In the event of an emergency, employees should look to those plans to determine site specific actions to be taken.

3.0 STANDARDS

3.1 **When confronted with an emergency, all Employees shall**:

3.1.1 Assume command.

3.1.2 Take appropriate personal protective measures.

3.1.3 Notify emergency responders (911).

3.1.4 Alert personnel in the area of any potential threat and/or initiate sheltering or evacuation procedures.

3.1.5 Make the following notifications:

3.1.5.1 Company Release Reporting Number for releases, explosions, fires requiring more than a hand-held extinguisher, or any intentional or unintentional deployment of a rack fire suppression system.

3.1.5.2 Supervisor.

3.1.5.3 If necessary, Operations Control Center, which can assist with closing valves, stopping pumps or other remote response.

3.1.5.4 Qualified Individual.

3.1.5.5 If necessary, the Facility Security Officer or Corporate Security Officer.

3.1.5.6 Utility companies as needed.

3.1.6 Isolate the scene.

3.1.7 Take defensive measures if it can be safely done.

3.2 **The Controller shall**:

3.2.1 Implement the appropriate Emergency Response Procedures immediately if an emergency event is observed. Refer to the following specific procedures:

3.2.1.1 Emergency Code Red Investigation Procedure.

3.3 **The Supervisor/QI upon arrival at an emergency event shall**:

3.3.1 Assume command until relieved. During a Code Red Event, communicate to Operations Control that you are assuming command of the incident.

3.3.2 Account for all personnel.

3.3.3 In conjunction with Operations Control, dispatch responders to close as many manual valves as possible in the areas upstream and downstream of a suspected pipeline release.

3.3.4 Notify Manager and Safety Specialist of the emergency.

3.3.5 Call out spill response contractors, air monitoring companies, specialty fire-fighting services or other contractors, if needed.

3.3.6 Activate all or a portion of the Spill Management Team, as needed.

3.3.7 Establish a command post and staff as needed per Incident Command procedures as described in Emergency Response plans.

3.3.8 Begin or assign documentation responsibilities.

3.3.9 Establish contact with local responders.

3.3.10 Prepare regular updates and provide to the Manager until the emergency is over or until otherwise notified.

3.4 **The Environmental Specialist shall**:

3.4.1 Make appropriate notifications as outlined in the Release Reporting Procedure.

3.4.2 Determine if an immediate response to the affected facility or area is necessary and take actions to respond.

3.4.3 Determine if other outside response contractors may be needed at the site to immediately lessen any environmental impact.

3.5 **The Safety Specialist shall**:

3.5.1 Determine if an immediate response to the affected facility or area is necessary and take actions to respond.

3.5.2 Develop or update site safety plans for the incident response.

3.6 **The Emergency Response Coordinator shall**:

3.6.1 Determine if an immediate response to the affected facility or area is necessary and take actions to respond.

3.6.2 Assist the Director of Operations, if necessary, in coordinating additional corporate resources.

3.6.3 Determine if outside resources are required at the site to assist in managing a large-scale event.

3.7 **The Manager shall**:

3.7.1 Report emergencies and updated information to the Director of Operations

3.7.2 Complete an Authorization to Respond within 72 hours for each emergency contractor with a Master Emergency Spill Response Agreement that responds to an incident.

3.7.3 After any emergency event such as a fire, explosion, natural disaster or facility release requiring a response by a government agency, conduct an After Action Review using the After Action Review Form to determine whether response plan procedures were effective. Communicate results to the Emergency Response and Security Coordinator.

3.8 **The Director of Operations shall**:

3.8.1 Make notifications as outlined in the Incident Reporting Procedure. Distribute regular updates when information is provided.

3.8.2 When necessary, assemble a team to coordinate Company response to a field based incident. Company response can include addressing issues relating to human resources, commerce, public reporting, government affairs or investor relations as well as providing resources and expertise for field operations. Potential team members may include safety, legal, human resources, risk management insurance department, technical services, media relations, investor relations, commercial, government affairs or others who may contribute resources, expertise or technical advice.

SIP Change Log

Date	Change Location	Change Description
1/10/10		new
1/1/2011	3.7.3	Added AAR in reference to 49 CFR 195.402 Added After Action Review From
04/08/11	2.1.4/3.3.4/3.5	Changed Safety Rep to Safety Specialist
1/1/2012	1.0	Added "Immediate Response Area"
1/1/2012	2.2.3/3.5.1.	Changed Spill Reporting to Release Reporting
1/1/2012	3.1.5.3	Further defined role of Operations Control
12/31/11	All	2012 Annual Review complete

QUESTION #8i

COMPUTATIONAL PIPELINE MONITORING PROCEDURE

1.0 PURPOSE

The purpose of this procedure is to establish a standardized method for Design, Maintenance, Testing, and Training for Computational Pipeline Monitoring (CPM) Tools in use by Magellan.

2.0 DESCRIPTION

2.1 CPM is a set of software tools that contains a hydraulic 'model' of the pipeline, including pipeline lengths and diameters, pipeline elevations, location of pipeline instruments such as pressure sensors and meters, and how the pipelines are connected to each other. CPM receives SCADA data that includes pipeline pressures, flows, and temperatures, and flow path indicators such as valve and pump status. The CPM system alerts the Controllers of differences between how the pipelines should be measuring for product flows given the pipeline layout and SCADA data and how the pipelines are measuring products. Indications include pipeline overages and shortages. When the shortages exceed thresholds, the CPM system typically generates alerts and alarms to the Controller to prompt them to investigate or act. This procedure details the proper use of CPM systems for Magellan. API1130 is the guiding document for CPM system creation and maintenance.

3.0 Computational Pipeline Monitoring (CPM)

3.1 **Supervisor of Operations Control Applications Shall, using current API 1130 as guidance:**

3.1.1 CPM Operations

3.1.1.1 Alarm Response Considerations:

3.1.1.1.1 Ensure proper alarms response definition to CPM alarm conditions, noted in SIP-9.02-ADM-008.

3.1.1.2 System Credibility and review:

3.1.1.2.1 Ensure CPM thresholds to provide alarming of probable hydraulic anomalies, utilizing the requirement as noted in the SCaR to tune new CPM instances within six (6) months of installation.

3.1.2 Testing

3.1.2.1 Ensure initial Testing: Each new CPM system will be tested to verify that it achieves the expected design or expected performance level. Results will be stored for 3 years.

3.1.2.2 Ensure periodic Retesting: Retest each CPM application every five (5) years.

3.1.2.3 Ensure change Driven Testing: Each CPM system will be retested following significant changes to ensure performance of the system, utilizing the CPM retest matrix contained in the SCaR.

3.1.3 Operating Issues

3.1.3.1 Security

3.1.3.1.1 Ensure CPM operational performance is maintained while adhering to API 1164 standards.

3.1.3.2 Parameter Changes

3.1.3.2.1 Ensure all alarms, parameters and sensors are not inhibited without cause.

3.1.3.2.2 Ensure an audit trail is maintained for such changes.

3.1.3.3 Pipeline System Maintenance Activities

3.1.3.3.1 Ensure consideration of provisions to minimize the effect of maintenance on the performance of the CPM system during maintenance.

3.1.4 Data Retention

3.1.4.1 Ensure occurrences of a leak declaration are historically documented.

3.1.5 Training

3.1.5.1 Ensure initial CPM training for new Controllers

3.1.5.2 Ensure annual refresher CPM training for all Controllers, not to exceed 18 months.

3.1.5.3 Evaluate training material to ensure appropriate for CPM application (reference API 1130 for list of suggested topics).

3.1.6 Documentation

3.1.6.1 Ensure each CPM system has a description and documentation available for users and those responsible for maintenance, as applicable.

3.1.7 Demonstrate and periodically test the leak detection capabilities on the East Houston to Crane and El Paso system as follows:

Tier I	*1% of flow detected within one-half hour.*
Tier II	*1% or more of flow detected within one-half hour.*
	0.5% – 1% of flow detected within one hour.

3.1.8 Ensure analysis of each line segment not utilizing a computer based leak detection system to determine if utilized system is adequate.

3.1.9 Based on analysis, provide recommendation regarding type of leak detection system to be used.

3.1.10 Ensure calculation of alarm thresholds of CPM systems based on pipeline properties and operating characteristics.

Table 1 – DOT Pipelines without CPM

Pipeline Description	Method of Monitoring	Reason Not CPM
GP Witter Street Outbound	OCC wrap pressure and flow. Local compare tank to meter	Flows unavailable on both ends of movement
GP Witter Street Inbound	OCC wrap pressure and flow. Local compare tank to meter	Flows unavailable on both ends of movement
GP Colonial /Explorer Outbound	OCC wrap pressure and flow. Local compare tank to meter	Flows unavailable on both ends of movement
GP Centennial PL from COLEX outbound	OCC wrap pressure and flow. Local compare tank to meter	Flows unavailable on both ends of movement
GP Centennial PL Outbound 385 Pump	OCC wrap pressure. Local compare tank to meter	Flows unavailable on both ends of movement
GP BP/Amoco PL Inbound	OCC wrap pressure. Local compare tank to called in meter	Flows unavailable on both ends of movement
GP Conoco Phillips PL Inbound	OCC wrap pressure and flow. Local compare tank to meter, pressure to pressure	Flows unavailable on both ends of movement
GP Exxon Mobile PL Inbound	OCC wrap pressure and flow. Local monitor tank gauge, compare pressure to pressure	Flows unavailable on both ends of movement
GP COLEX Line Displacement (Ship Channel)	OCC wrap pressure. Local compare tank to meter, pressure to pressure	Flows unavailable on both ends of movement
GP Carrier Drain PC-4 to Colonial/Exp	OCC wrap pressures. Local monitor tank vs know line capacity	Flows unavailable on both ends of movement
GP Carrier Fill PC-4 to Colonial/Exp	OCC wrap pressures. Local monitor tank vs known line capacity	Flows unavailable on both ends of movement
GP 115 Line Displacement Tank to Tank	OCC wrap pressure and flow	Flows unavailable on both ends of movement
GP Centennial Loop Displacement from COLEX	OCC wrap pressures. Local monitor pressure vs pressure	Flows unavailable on both ends of movement
GP Centennial Loop Displacement – 385 Pump	OCC wrap pressures. Local monitor pressure vs pressure	Flows unavailable on both ends of movement
GP PRSI Witter Street Inbound	OCC wrap pressure and flow	Flows unavailable on both ends of movement
New Haven 85E to Hamden	OCC wrap pressures and flows	Analysis under way to implement CPM

Pipeline Description	Method of Monitoring	Reason Not CPM
Gibson 8 inch line	OCC wrap pressure	Flows unavailable on both ends of movement
Gibson 6 inch line	OCC wrap pressure	Flows unavailable on both ends of movement
CC to Shinn-Pence	OCC tank-to-tank spreadsheet one hour O/S	Flows unavailable on both ends of movement
Enid Tank Lines	Walk lines every week. Lines do not hold pressure	Flows unavailable on both ends of movement
West Tulsa Glenpool East to Explorer	Infrequet operation, local personnel compare local tank gauge to customer meter	Flows unavailable on both ends of movement
KC Phillips	OCC wrap flow.	Flows unavailable on both ends of movement
KC Butane	OCC monitor pressure	Flows unavailable on both ends of movement
Garner CFI 2 inch spur	OCC monitors pressure, and monitors flow when active.	Flows unavailable on both ends of movement
Sargent Bluff to Port Neal	OCC Wraps pressure and flow	Flows unavailable on both ends of movement